



Department of the Environment

Status Report State Climate Change Activities in Maryland

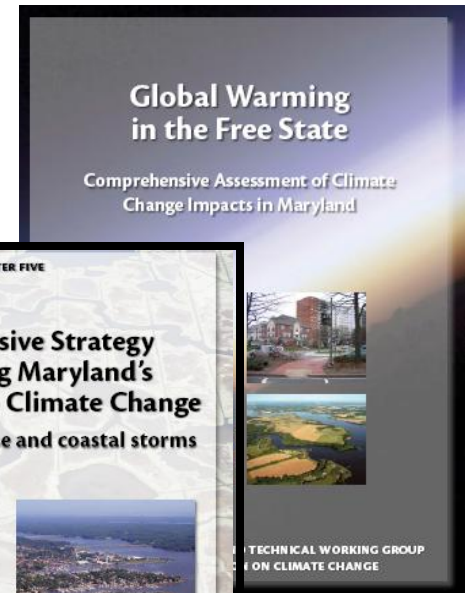
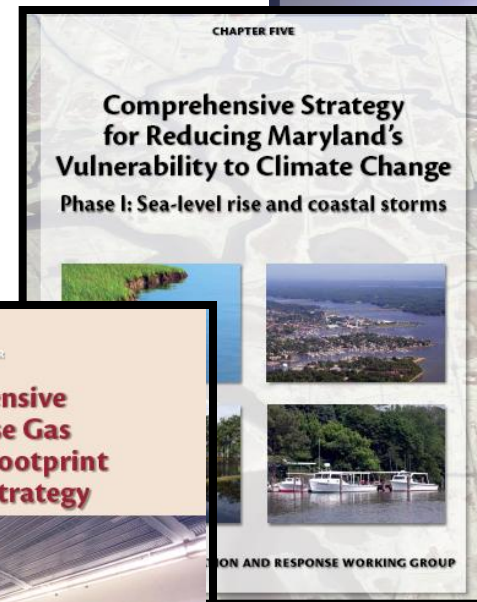
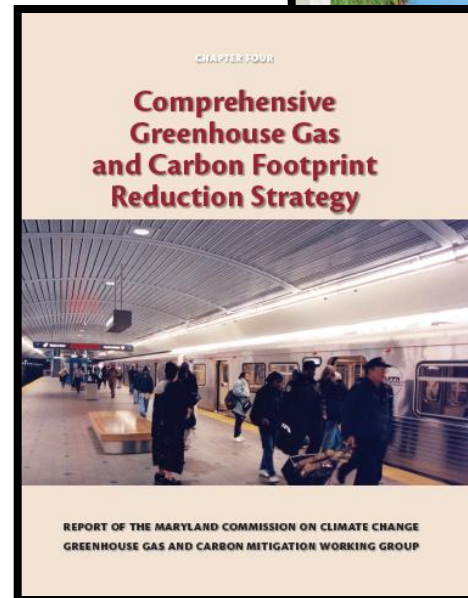
Tad Aburn, Air Director
Maryland Department of the Environment



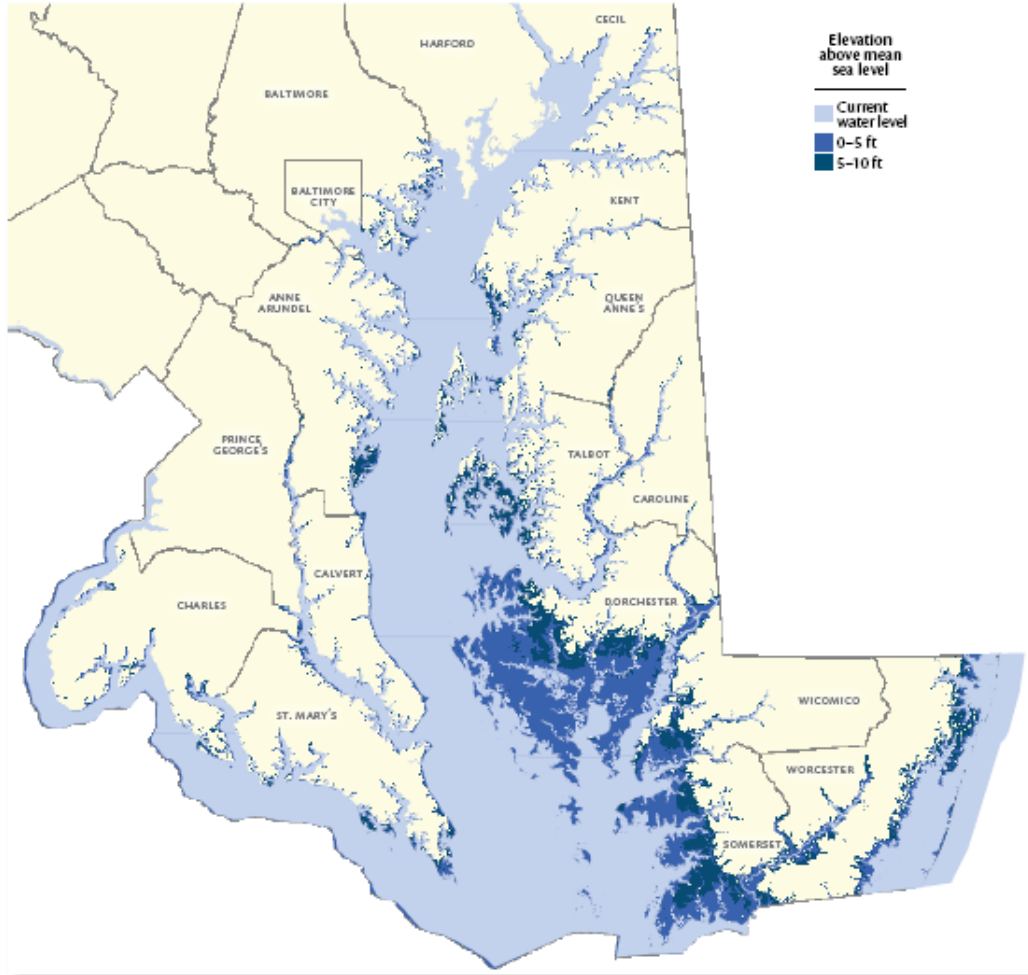
- Climate Change Commission
- Regional Greenhouse Gas Initiative
- Greenhouse Gas Reduction Act of 2009

The Climate Action Plan

- Finalized in 2008
- Reports from 3 Working Groups
 - 42 recommended strategies on mitigation
 - 19 recommended strategies on Adaption
 - Effects of global warming on Maryland
- Other Issues:
 - The cost of inaction
 - Transition to a future Federal program



Science Working Group



Maryland Specific Assessment

- Annual average temperature predicted to increase 3 degrees by 2050
- Coastal areas experiencing sea-level rise
 - Approximately 1 foot during 20th century
- Mitigation and Adaptation Strategies are needed
- Early actions are cost effective

Adaptation Working Group

Rise in Sea Level

- Coastal Resources
- Impacts on people and nature

Loss of Aquatic Resources

- Chesapeake Bay Ecosystems
- Living Resources

Potential for Extreme Weather

- Storm surges and floods
- Hurricane Isabel



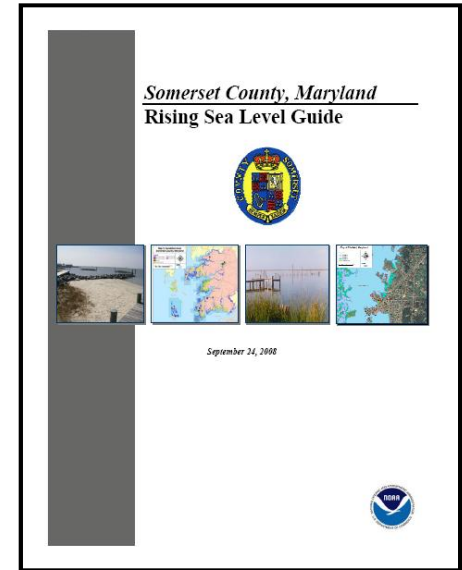
Recommendations on Adaptation

19 recommendations

- Existing-Built Environment
- Future Growth & Development
- Human Health, Public Safety & Welfare
- Natural Resources & Resource-based Industries

Examples of recommendations:

- Building code and floodplain management revisions
- Integrated planning for sea level rise
 - transportation/infrastructure siting & design
 - growth and development planning
- Climate change insurance advisory committee
- Forest and wetland protection
- Sustainable shorelines and buffer management
- Local government guidance

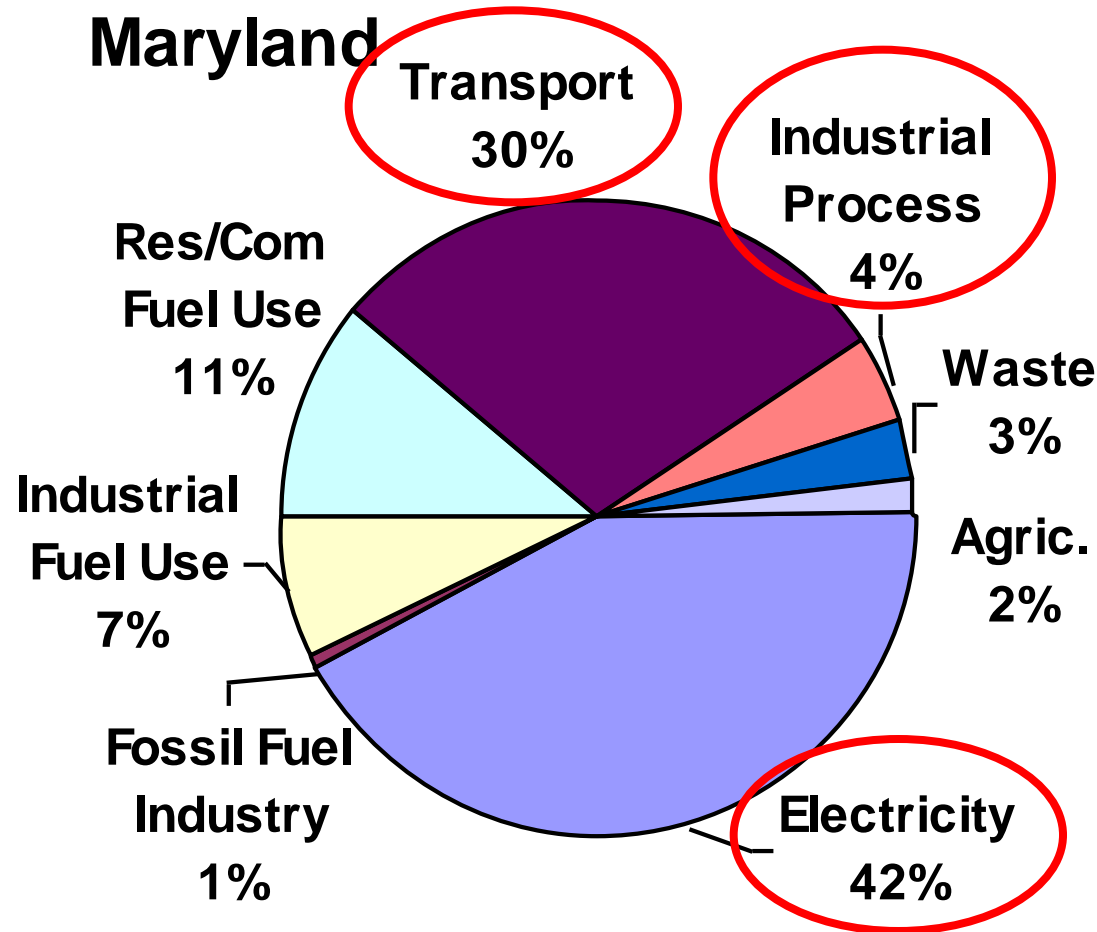


Mitigation Working Group

- Steps Maryland can take to reduce greenhouse gas (GHG) emissions & State carbon footprint
- 42 Recommended measures
 - \$2 Billion net economic benefit by 2020
 - New green jobs
 - Protects existing jobs
 - 40 to 55 percent reduction in GHG emissions by 2020



Maryland's Emissions



- 70% of Maryland's GHG emissions come from the combination of the electricity consumption and transportation sectors
- Electricity consumption includes the >25% of electricity created outside of Maryland's borders

42 Recommended Measures

Energy
Supply

Residential,
Commercial,
And
Industrial
Strategies

Transportation
and
Land Use
Strategies

Agricultural,
Forestry and
Waste
Strategies

Cross
Cutting
Strategies

For Each Measure:

- GHG Emission reductions
- Costs
- Benefits
- Linkage to existing efforts
- Other benefits from the measure

Types of Measures

- EXISTING
 - Healthy Air Act, the Clean Cars Program, EmPOWER MD, RPS, LEEDs standards in public buildings, 2008 energy legislation
- UNDERWAY
 - Telework programs, transit incentives, Smart Growth, urban trees, buy local
- VOLUNTARY
 - Public Education and Outreach, Government Lead by Example
- LEGISLATIVE
 - Generation Performance Standards
 - Improved building & trade codes



Recent Legislative Actions

- 2006 The Healthy Air Act (RGGI)
- 2007 Clean Cars Program
- 2008 Legislation
 - Empower Maryland (HB 374)
 - Enhanced Renewable Portfolio Standards (SB 209/HB 375)
 - Strategic Renewable Energy Investment Fund- RGGI (SB 268)
 - Low Cost Energy Efficiency Loans (SB 885/HB 1301)
 - High Performance Buildings (SB 208)
 - Solar Easements (HB 117)
 - Solar/ Geothermal Grants (HB 377)
 - Maryland Clean Energy Center (HB 1337)
 - Bio-heating Oil Credit (SB 565)
 - Transit Oriented Development (SB 204)
 - Project Open Space (SB 259)
 - No Net Loss Forestry (SB 431)





Climate Action Plan Reductions

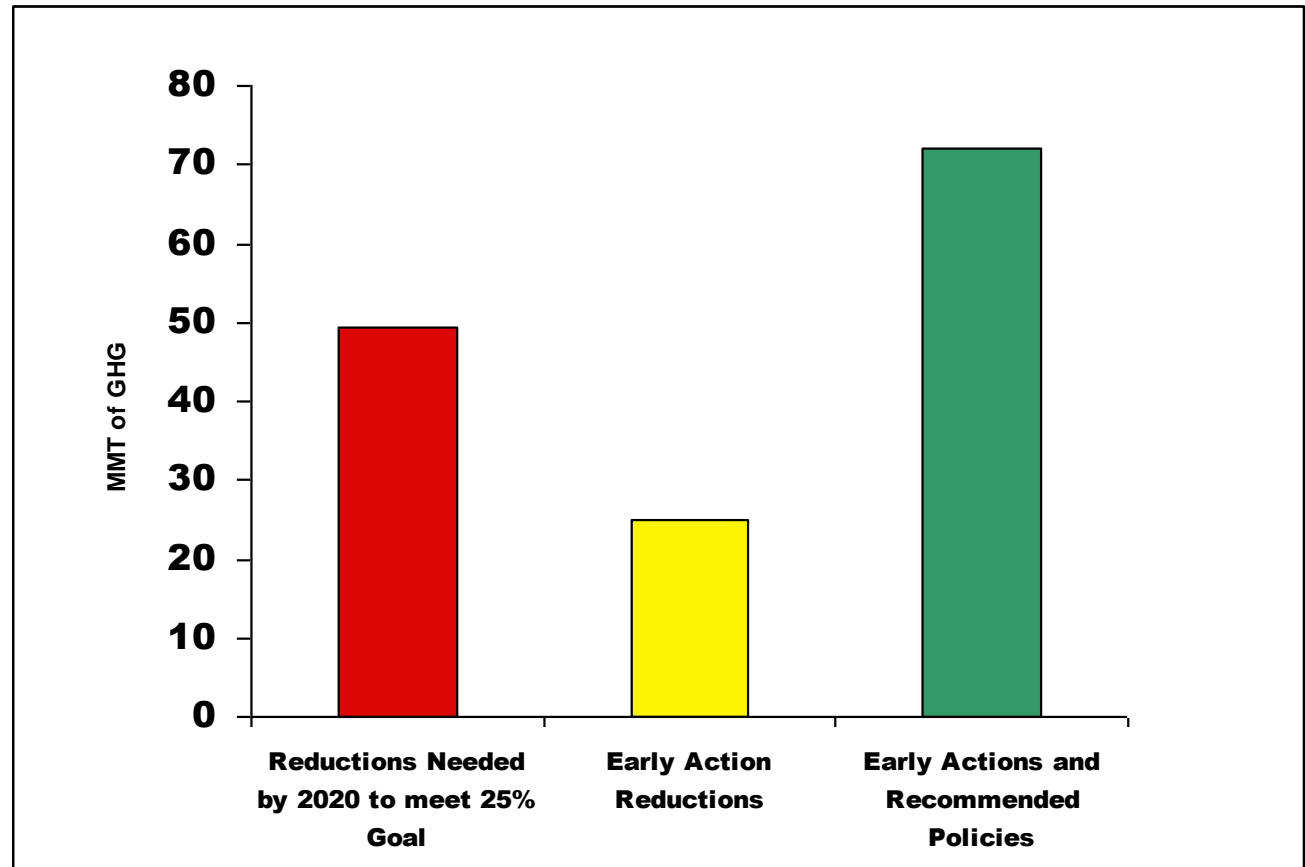
<i>Reduction Program</i>	<i>Projected 2020 Emission Reductions in MMT of CO2</i>	<i>Percentage of Total Reductions</i>
RGGI	8.7	11
CALEV	6.2	8
EmPOWER Maryland	6.8	8
Renewable Portfolio Standard	12.2	15
Recommended Energy Supply Programs	12.4	15
Recommended Residential, Commercial, Industrial Programs	11.2	14
Recommended Transportation and Land Use Programs	16.0	20
Recommended Agricultural, Forestry and Waste Programs	5.6	7
ALL Reductions	81.0	100



Projected Reductions

Can we meet our 2020 goal?

- The Commission's 2020 goal is to achieve a 25% to 50% reduction
- Combined with Maryland's early action programs, the 42 strategies are projected to achieve or exceed the 25% reduction goal



* Emission reduction projections under review

Impact to Maryland Jobs



Green Jobs

Potential for 144,000 to 326,000 jobs from clean tech industries

Up to \$5.7 Billion in wages and salaries

\$973 Million boost in State and local tax revenues

Maryland well-positioned to attract clean tech businesses but lagging behind other states

States investing now are reaping benefits of \$50B annual worldwide clean tech industry

Source: DBED and MEA funded study: "Economic Development Potential of Clean Energy Technology in Maryland", International Center for Sustainable Development, Inc., Dec. 2006

Existing Manufacturing Jobs

Climate Action Plan: no new impact

Reductions from manufacturers (through cap-and-trade program) may come later

- Federal Program
- RGGI expansion



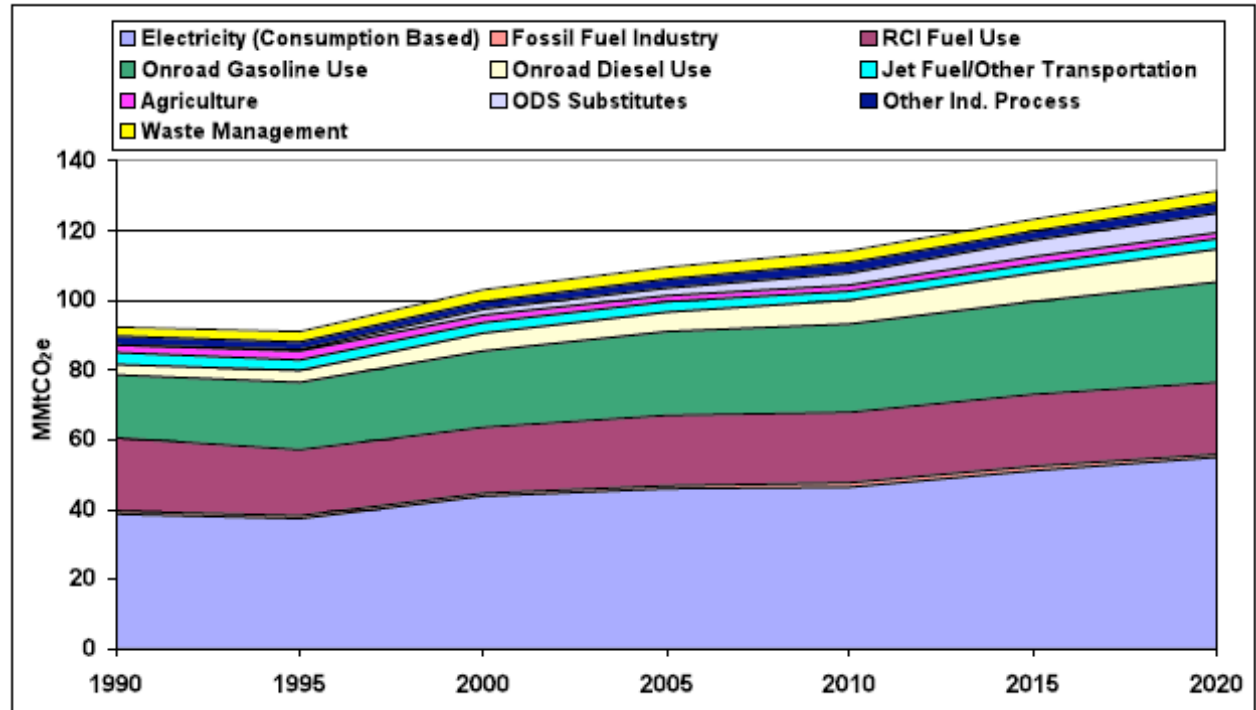
Mitigation Policy Options

POLICY OPTION	NUMBER	IMPLEMENTING AGENCY
<i>Cross Cutting (CC)</i>		
GHG Inventories & Forecasting	CC-1	MDE
GHG Report & Registry	CC-2	MDE
Statewide GHG Reduction Goals & Targets	CC-3	MDE
State & Local Government Lead-by-Example	CC-4	MDE
Public Education & Outreach	CC-5	MDE
Review Institutional Capacity	CC-7	Climate Change Commission
Participate in Regional, Multi-State & National Efforts	CC-8	MDE
Promote Economic Development Opportunities	CC-9	DBED
"After Peak Oil"	CC-10	MEA
Public Health Risks	CC-11	DHMH
<i>Residential, Commercial, & Industrial (RCI)</i>		
Improved Building & Trade Codes	RCI-1	DHCD
Demand-Side Management & Energy Efficiency	RCI-2	MEA
Low-Cost Loans for Energy Efficiency	RCI-3	MEA
Improved Design, Construction, Appliances & Lighting	RCI-4	MDE
More Stringent Appliance/Equipment Efficiency Standards	RCI-7	MEA
Energy Efficiency resource Standard	RCI-10	MEA
Promotion & Incentives for Energy Efficient Lighting	RCI-11	MEA

Importance of Early Actions

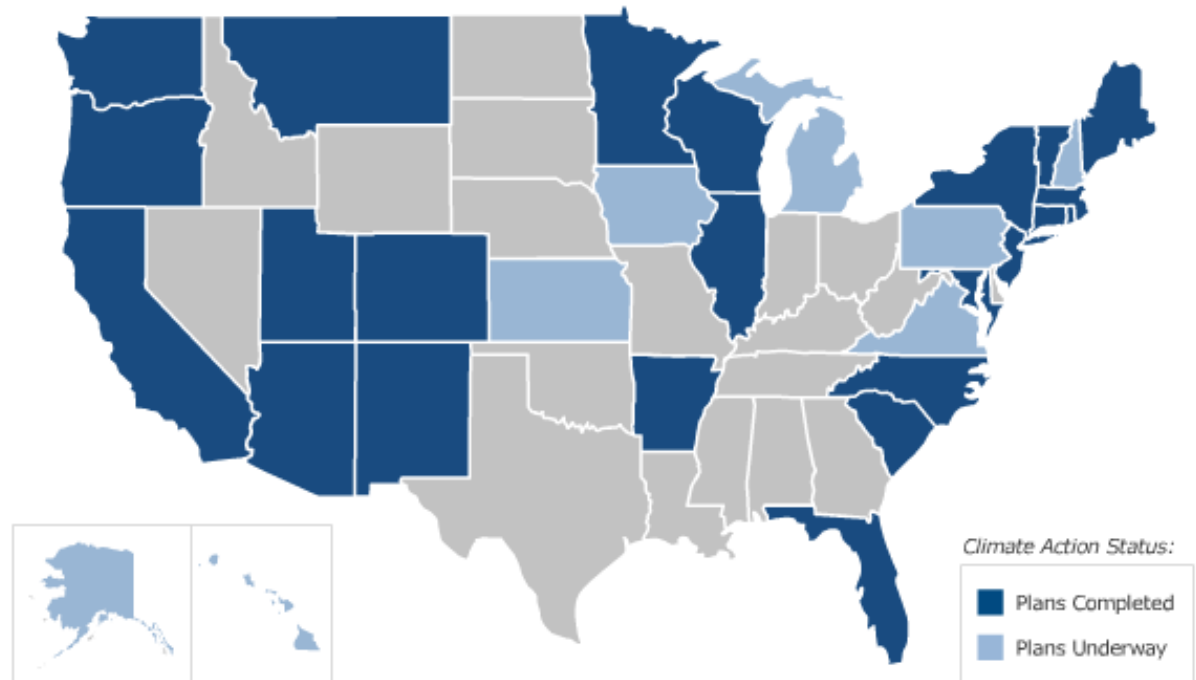
- 1 ton of GHG reduction now is more valuable than 1 ton of reduction in 2050
- Implementing all 42 measures estimated to result in a net economic benefit of approximately \$2 Billion in 2020
- More greenhouse gases accumulate and stay in the atmosphere each year

Greenhouse Gas Emission Trends in Maryland



Other States

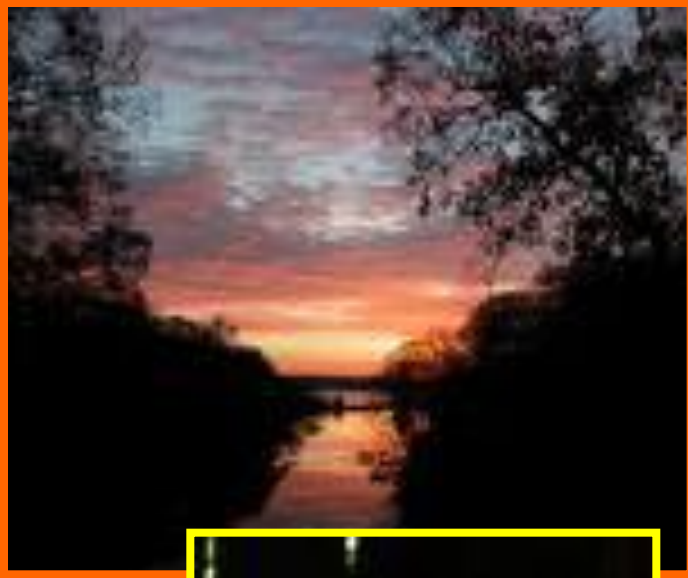
- 9 leadership states have statutory reduction goals
 - Range from 1990 levels by 2020 (CA, NJ, WA, HI) to at least 10% below 1990 levels by 2020 (MA, CN, ME, OR)
 - Comparable to MD's "25% below 2006 levels by 2020" (about 4% below 1990 levels by 2020)
- CA, MA, MN require agency to *adopt* reduction plan and implementing regulations
- NJ, OR require agency to *recommend* statutory and regulatory reductions



- RGGI is a cooperative effort of New England and Mid-Atlantic states
- Establishes a cap-and-trade program focused on power plant emissions of greenhouse gases (CO_2)
- First CO_2 cap-and-trade program of its kind



Reductions from RGGI



- Applies to fossil fuel-fired electric generating units 25 megawatts and larger
- Involves a two-phase cap. Will stabilize MD emissions 2009-2014 at 37.5 tons, then reduce emissions 10% by 2018
- Reductions based on auctioned allowances – MD has raised over 50 million from three auctions so far
- Strategic Energy Investment Fund – managed by MEA

Goals of GGRA Legislation

- Legislative Framework for Emissions Reductions
- Set Timeframe for Early Reductions
- Net Positive Economic Impact
- Protect Existing Manufacturing Jobs
- Protect All Sectors Affected
- Recognize Need for National Program
- Provide for Major Adjustment If Needed

Key Components

2020: 25% Reduction of Emissions

- State Plan by 2012
- 2 Reports to Legislature in 2015
- Requires 2016 Legislative Action
- Manufacturing Provisions
- Other Sector Provision

State Plan

SCHEDULE

- 2011: Draft Plan to reduce GHG emissions 25% by 2020 from a 2006 base year
- 2011 Public Workshops
- 2011 Submitted to General Assembly October
- 2012 Plan Finalized
- 2015 Report to General Assembly on Status of Plan

REQUIREMENTS

- Protect existing jobs
- Include provisions to stimulate creation of new jobs
- Net positive effect on Maryland's economy



2 Reports to Legislature in 2015

MANUFACTURING

- Independent Study

MDE STATUS REPORT

- Are reductions on schedule?
- Are jobs being created and protected?
- Is Plan having a positive impact on Maryland's economy?
- What Are Requirements of Federal Program, if any?
- Should Maryland keep, change or eliminate the 25% Reduction by 2020 Requirement?



Mid-Course Correction in 2016

25% REDUCTION BY 2020 REQUIREMENT:

Legislature *Must Act* to Continue 25% Reduction

Renew, Change, Lapse: How is the law working?

- *Are existing jobs being affected?*
- *Are new jobs being created?*
- *Is the Plan having a positive impact on economy?*
- *Is there now a federal program?*
- *Should the Maryland program be changed or eliminated?*

THANKS - Questions?